

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte JORG LAWRENZ-STOLZ

Appeal No. 2001-1295
Application No. 09/283,169

ON BRIEF

MAILED

NOV 25 2002

**PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES**

Before THOMAS, BARRETT, and FLEMING, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 10, 12, and 14 through 21.

Representative claim 10 is reproduced below:

10. In a laser diode module wherein laser radiation from a linear laser diode array is coupled into a plurality of optical fibers corresponding in number to the number of laser diodes in the laser diode array, each of the optical fibers having a light entrance side, the invention characterized in that:

the optical fibers are mounted on a holder and arranged so that the light entrance sides thereof form a linear array;

a cylindrical lens having at least the length of the linear laser diode array, said cylindrical lens being attached directly to the light entrance side of each of the optical fibers using a bead of glue in a manner to self

center and align the cylindrical lens with respect to the light entrance sides independent of the holder; and

said linear array of light entrance sides of the optical fibers and said cylindrical lens glued thereon is aligned with the linear array of laser diodes for receiving radiation emitted therefrom and focussing [sic] said received radiation into said plurality of optical fibers.

The following references are relied on by the examiner:

Comerford et al. (Comerford)	4,079,404	Mar. 14, 1978
d'Auria et al. (d'Auria)	4,147,403	Apr. 3, 1979
Dakss et al. (Dakss)	4,269,648	May 26, 1991
Scifres et al. (Scifres)	4,818,062	Apr. 4, 1989

All claims on appeal, claims 10, 12, and 14 through 21, stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon d'Auria in view of Comerford, further in view of Dakss, as to claims 10, 12, and 14 through 18, with the addition of Scifres as to claims 19 through 21.

Rather than repeat the positions of the appellant and the examiner, reference is made to the Brief and Reply Brief for appellant's positions, and to the Final Rejection and Answer for the examiner's positions.

Opinion

At the outset, we note that a parent application of the present application was the subject of a prior decision, Appeal No. 95-2326 dated June 23, 1998.

For the reasons set forth by the examiner in the Answer, as amplified upon by the reasoning in this opinion, we sustain the rejection of all claims on appeal under 35 U.S.C. § 103. Although the appellant indicates at page 3 of the principal brief on

appeal that all claims fall together, arguments are collectively presented as to one significant feature in independent claims 10, 15, and 19 in the Brief and Reply Brief. No arguments are presented as to any dependent claim. Even as to the second stated rejection relying upon Scifres, appellant makes only passing mention of it at the bottom of page 5 and at the bottom of page 10 of the principal brief on appeal, relying for patentability of independent claim 19 upon the respective positions taken with respect to d'Auria, Comerford, and Dakss as to the first stated rejection. No substantive arguments are presented as to Comerford other than to note what it teaches at the bottom of pages 5 and 6 of the principal brief on appeal. It appears representative of the prior art at specification pages 1-3. As such, appellant's arguments focus upon the teachings and suggestions of d'Auria and Dakss in the Brief and Reply Brief.

To further set the proper perspective for the substance of this opinion and decision, we make reference to appellant's disclosed invention. The embodiments shown in Figures 1 through 3 pertain to only a one laser diode-optical fiber arrangement which does not utilize any form of mounting arrangement for the optical fibers. In contrast thereto, Figures 4 through 6 show such a holding means 50. The nature of the recitation in the present claims on appeal of the cylindrical lens being positively recited in claim 19 as a single cylindrical lens and being stated in other words in independent claims 10 and 15 as a cylindrical lens that extends across the length of the linear diode array and their corresponding plural optical fibers excludes the plural cylindrical lens

embodiment in Figures 5 and 6 and includes only the showing in Figure 4. This figure is only discussed at pages 18 and 19 of the specification as filed.

The patents to d'Auria, Comerford, and Scifres each show in part a linear array of laser diodes with a corresponding in number linear array of optical fibers. Appellant's discussed prior art at specification pages 1 through 3 as well as d'Auria and Comerford teach the claimed cylindrical lens interposed between this noted arrangement.

We note that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of a primary reference. It is also not that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Keller, 642 F.2d 414, 425, 208 USPQ 871, 881 (CCPA 1981); In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991).

The examiner makes a reference at page 8 of the Answer to this just-noted case law, which in our view properly sets forth the perspective under which the present rejection must be viewed. In accordance with the above-noted case law, we find the teaching value of Dakss is compelling evidence of providing a simplified manner, obviously cost effective as well, for fixing lenses to the light entrance sides of optical fibers to maximize and, in an efficient manner, couple laser radiation from a laser diode array to their optical fibers. This is aptly justified according to the background teachings

at column 1 and at the top of column 2 of Dakss as well as those more specific advantages noted by Dakss at column 3, line 48 to column 4, line 4.

The teaching value of Dakss provides a simplified manner in which lenses may be attached directly to the light entrance side of each optical fiber using a bead of glue in a manner to self-center and align the lens with respect to the light entrance side of the optical fiber to the extent recited in each of independent claims 10, 15, and 19. The end of the abstract indicates that the bead lens is moved by the adhesive until the lens is aligned with or very close to the center axis of the fiber. This teaching is emphasized again at the middle of column 2 of Dakss and it is further emphasized at column 3, lines 27 and 28 that the technique of Dakss "can be called a self-centering technique." This alone is a compelling teaching to the extent centering is claimed.

When considered with the teachings and showings in d'Auria, we agree with the examiner's reasoning in the Final Rejection and Answer that it would have been obvious for the artisan to have utilized the same technique of Dakss as it specifically relates to the attachment of individual microsphere bead coupling lenses to the ends of optical fibers and apply his teaching of how Dakss achieved this accurately and efficiently to the linear array of optical fibers to which a cylindrical lens has been attached according to the generalized teachings of d'Auria as well as Comerford. In contrast to those teachings and showings in d'Auria and Comerford, as well as appellant's admitted prior art at specification pages 1 through 3, the artisan clearly would have recognized that the teaching of Dakss would have been compelling to apply

to a cylindrical lens arrangement because each of these prior art approaches utilizes a very cumbersome approach of aligning and supporting the laser diodes, their optical fibers and the intermediate cylindrical lens therebetween. The approach in Dakss is clearly independent of any holder which would subsequently hold the cylindrical lens to the individual optical fibers in Dakss to the extent this feature of independence is recited in each independent claim 10, 15, and 19 on appeal. A substrate-type holder of appellant's admitted prior art, Comerford and d'Auria would therefore not have been necessary to "hold" the cylindrical lens according to the approach taught by Dakss.

We are therefore unpersuaded by appellant's arguments repeated at length in the Brief and Reply Brief overemphasizing d'Auria. The above-noted case law makes clear that it's proper within 35 U.S.C. § 103 to consider the combined teachings and suggestions of the applied prior art rather than to approach it from a structural combinability viewpoint of body incorporation of one into another, which is the focus of the arguments presented by appellant in the Brief and Reply Brief. As noted earlier, Dakss contains compelling teachings to the artisan in the discussion at columns 1 and 2 as well as the portion at the bottom of column 3 and the top of column 4 as motivation reasoning for the combination.

Appellant's argument bridging pages 7 and 8 of the principal brief on appeal is inapposite to the extent it urges that the combination would have rendered inoperable the device of d'Auria. On the contrary, the structure and the alignment of the laser diode array propagating light through a cylindrical lens to plural, corresponding optical

fibers would have been greatly simplified without any apparent loss of accuracy of the alignment. Since Dakss makes it clear that the gluing operation therein must be performed before the lens-fiber combination is applied in a holder arrangement for use with a laser diode, a corresponding step obviously would have been performed by the artisan in applying the teaching value of Dakss to a cylindrical end arrangement as in the Figure 5 showing of d'Auria as argued by the examiner. There is no definitive or active teaching away of the combination as urged at pages 8 and 9 of the principal brief on appeal. In re Gurley, 207 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Feb. Cir. 1994).

Lastly, we address appellant's position at page 9 of the principal brief on appeal that no teaching or suggestion that the Dakss technique can be used to attach a lens to plurality of optical fibers can be found. As explained earlier in this opinion, we are satisfied that the examiner's reasoning and the evidence of the applied prior art provides the requisite teaching or suggestion of the combinability of the teachings of the references relied upon. No express teaching of combinability is required in accordance with the earlier-noted case law.

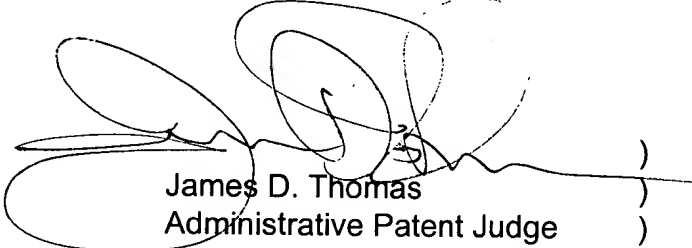
We have noted earlier that Dakss appears to be specifically related to single fibers and single lenses rather than cylindrical lenses and a plurality of fibers. In criticizing the examiner's rationale of utilizing Dakss and applying his teaching to the overall arrangements of d'Auria and Comerford to simplify the alignment operation thereof, appellant's own specification does not explain in any manner how the gluing arrangement of a cylindrical lens according to the arrangement shown in Figure 4 from


which the current claims are derived is actually performed, and performed in such a manner as to be independent of the holder as required by each independent claim on appeal. The language "independent of the holder" in each independent claim on appeal is not specifically taught in any manner in the specification as filed and it is not clear from our study of the independent claims on appeal what the language "independent of the holder" actually modifies in the claims. Appellant has no disclosed basis in which to criticize the examiner's rationale of the combinability. Appellant's specification does not detail how the cylindrical lens 60 of Figure 4 is attached to the linear array of optical fibers in a manner different than the manner taught generally and explicitly referred to according to the showings in Figures 1 through 3, the single laser diode and single optical fiber arrangement that does not require the use of a holder. On the other hand, appellant's Figures 4-6 embodiments require a holder 50.

In view of the foregoing, the decision of the examiner rejecting claims 10, 12, and 14 through 21 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


James D. Thomas
Administrative Patent Judge


Lee E. Barrett
Administrative Patent Judge


Michael R. Fleming
Administrative Patent Judge

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